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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,204	09/18/2003	Rachel Yerushalmi-Rozen	7640-X03-011	7170
27317 7590 01/07/2008 FLEIT KAIN GIBBONS GUTMAN BONGINI & BIANCO 21355 EAST DIXIE HIGHWAY SUITE 115 MIAMI, FL 33180			EXAMINER MCCRACKEN, DANIEL	
			ART UNIT 1793	PAPER NUMBER
			MAIL DATE 01/07/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/667,204

**Applicant(s)**

YERUSHALMI-ROZEN ET AL.

**Examiner**

Daniel C. McCracken

**Art Unit**

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1, 3-5 and 7-20 is/are pending in the application.
- 4a) Of the above claim(s) 12-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-5, and 7-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Citation to the Specification will be in the following format (S. # : ¶) where # denotes the page number and ¶ denotes the paragraph number. Citation to patent literature will be in the form (Inventor # : LL) where # is the column number and LL is the line number. Citation to the pre-grant publication literature will be in the following format (Inventor # : ¶) where # denotes the page number and ¶ denotes the paragraph number.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1, 3-5, and 7-11 have been considered but are moot in view of the new ground(s) of rejection. With respect to the rejection of said claims under 35 U.S.C. 103(a) over Lai, et al. in view of Ausman, et al., Applicants have now amended Claim 1 to recite a “*hydrophilic* polymeric material.” Applicants were requested to provide a pinpoint citation to indicate where they were drawing support for the amendment (Non-final office action of 8/22/2007, “Conclusion”), but did not. This omission notwithstanding, the amendment draws support from at least (S. 5: [00019]), and as such, the amendment will be entered.

Lai, et al. does not disclose *hydrophilic* polymers. In fact, Lai recites “*hydrophobilized* polysaccharides.” (Lai at 64, col. 1). Ausman, et al. does not remedy this deficiency. Accordingly, the rejection is withdrawn. New rejections appear forthwith.

### ***Specification***

The disclosure is objected to because of the following informalities: At (S. 5: [00019]), it would appear as if an underscore (“\_”) was inadvertently inserted before “committing.”

Appropriate correction is required. Applicants are requested to make a thorough review of the Specification and correct any and all deficiencies.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action. The entire reference teaches each and every limitation of the rejected claims. The pinpoint citations provided are in no way to be construed as limitations of the teachings of the reference, but rather illustrative of particular instances where the teachings may be found.

Claims 1, 3-5, and 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,114,477 to Mort, et al. in view of Satishkumar, et al., *Novel experiments with carbon nanotubes: opening, filling, closing and functionalizing nanotubes*, J. Phys. B: At. Mol. Opt. Phys. 1996; 29: 4925-4934 (hereinafter "Satishkumar at \_\_\_") and Ausman, et al, *Organic Solvent Dispersions of Single-Walled Carbon Nanotubes: Pristine Nanotubes*, J. Phys. Chem. 2000; 104(38): 8911-8915.

With respect to Claims 1 and 7-8 Mort generally recites a method for preparing a suspension of fullerenes. *See e.g.* (Mort 6: 12, *et seq.*) (fullerenes). Gum Arabic and polysaccharides (i.e. the "hydrophilic polymeric material") are recited in quantities of 0-10 % by weight. (Mort 8: 4-19). It is further noted that Mort *explicitly* recites the now claimed hydrophobic/hydrophilic properties of the polymeric solution. (Mort 1: 11-16). To the extent Mort describes "spherical fullerenes" versus carbon nanotubes, this does not impart patentability.

Mort identifies the numerous advantages of utilizing fullerenes, including their solubilities in organic and aqueous solvents. *See* (Mort 4: 17-23). Further, the ability to tailor the properties of the fullerene through chemical modification was cited as advantageous. (Mort 4: 25-34). These same properties that make spherical fullerenes advantageous are well described in the literature for carbon nanotubes. *See* (Satishkumar – entire article; 4927 *et seq.* – filling; 4930 *et seq.* – functionalizing). One of ordinary skill (presumably high) in the art would recognize substituting nanotubes for fullerenes as an obvious expedient, owing to the similarity in the chemistry that can be performed with each. Finally as to the “sonication” step required by Claim 1, Mort describes a generic mixing step. *See* (Mort 8: 40 *et seq.*). To the extent Mort may be silent on sonication as a mixing step, the Examiner takes official notice that sonication is a well known mixing/dispersing technique to those skilled in the art. In support of taking official notice, the Examiner cites to Auman, et al. *See e.g.* (Ausman at 8912, col. 1) (“dispersed by bath sonication”). As to Claims 3-4, water removal via filtration is recited. (Mort 8: 45-51). As to Claim 5, Mort recites the water content of the dispersion being from about 60-99.5%. (Mort 6: 5-11). As such, the polymeric and nanotube concentration is less than 65% as required by Claim 5. With respect to Claims 9-11, the product is necessarily taught where the process has been identified.

In summation, fullerenes dispersed in hydrophilic polymer solutions, including Gum Arabic, is described in the literature. (The Mort patent is in fact – to this Examiner’s knowledge – the first patent to issue with fullerene nanotechnology). Substitution of carbon nanotubes is an obvious expedient for the reasons cited above.

*Conclusion*

Applicant's amendment (i.e. reciting "hydrophilic" polymeric materials) necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

All amendments made in response to this Office Action must be accompanied by a pinpoint citation to the Specification (i.e. page and paragraph or line number) to indicate where Applicants are drawing their support.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel C. McCracken whose telephone number is (571) 272-6537. The examiner can normally be reached on Monday through Friday, 9 AM - 6 PM EST.

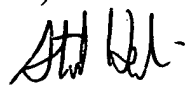
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
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Assistant Examiner  
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